

7. Inspect the area (B, **Figure 130**) in the gear cover where the starter reduction gear shaft rides for wear or galling. Replace the cover if any damage is evident.

ALTERNATOR, PULSE GENERATOR AND STARTER CLUTCH

The starter clutch is mounted on the backside of the alternator rotor and the ignition pulse generator is tied-in with the alternator rotor assembly.

Removal

Refer to **Figure 131** for this procedure.

- 1. Place the vehicle on level ground and set the parking brake.
- 2. Disconnect the alternator and pulse generator electrical connectors (**Figure 132**).

- 3. Remove the left-hand crankcase cover as described in this chapter.
- 4. Remove the bolt (**Figure 133**) securing the alternator rotor to the crankshaft.

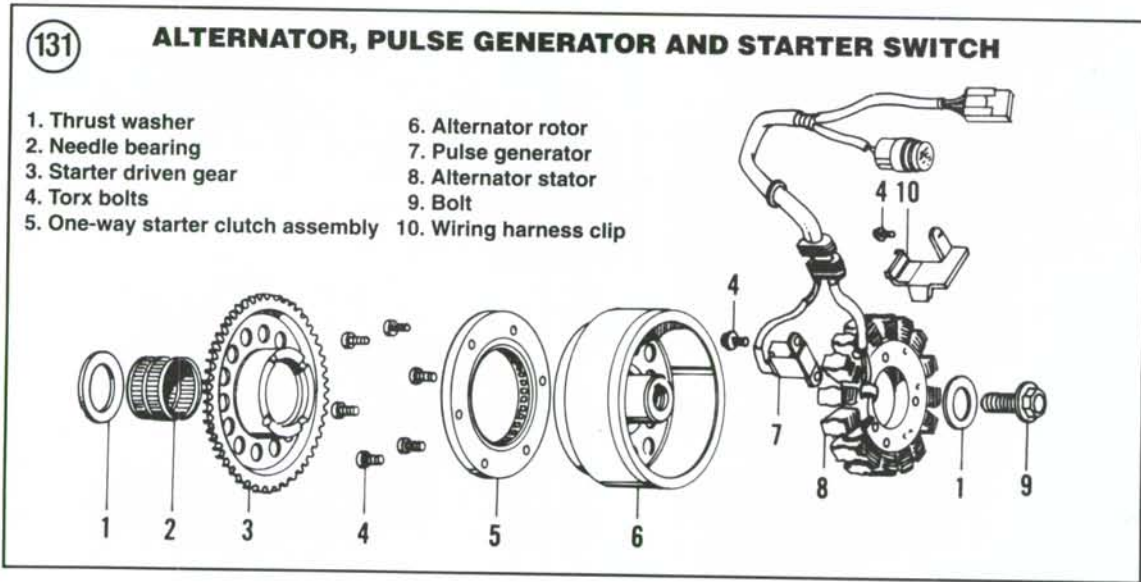
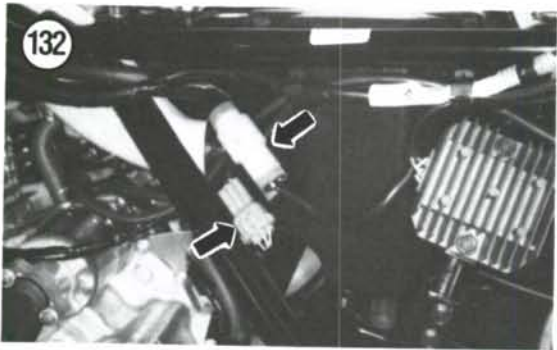
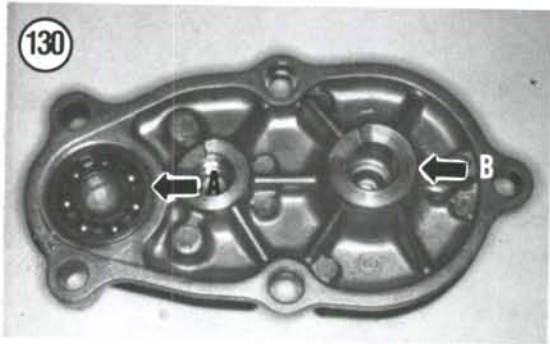
NOTE

If necessary, use a strap wrench to keep the rotor from turning while removing the bolt.

- 5. Screw a flywheel puller into the alternator rotor until it stops. Use the Honda flywheel puller (part No. 07733-0020001 or 07933-3950000) (**Figure 134**), a K & N puller (part No. 82-0120) (**Figure 135**), or equivalent.

CAUTION

Don't try to remove the rotor without a puller; any attempt to do so will ultimately lead to some form of damage to the engine and/or the rotor. Many after-



market types of pullers are available from most motorcycle dealers or mail order houses. This type of puller is very inexpensive and it makes an excellent addition to any mechanic's tool collection. If you can't buy or borrow one, have a dealer remove the rotor.

6. Gradually tighten the puller until the rotor disengages from the crankshaft.

NOTE

If the rotor is difficult to remove, strike the puller with a hammer a few times. This will usually break it loose.

CAUTION

If normal rotor removal attempts fail, do not force the puller as the threads may be stripped out of the rotor, causing expensive damage. Take it to a dealer and have them remove it.

7. Remove the rotor/starter driven gear and puller. Unscrew the puller from the rotor.

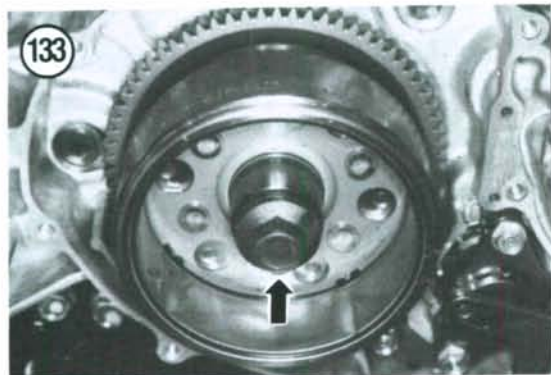
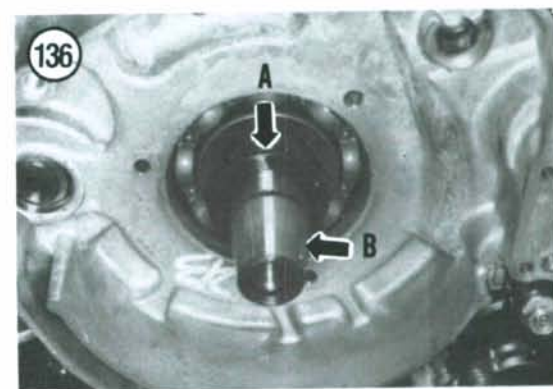
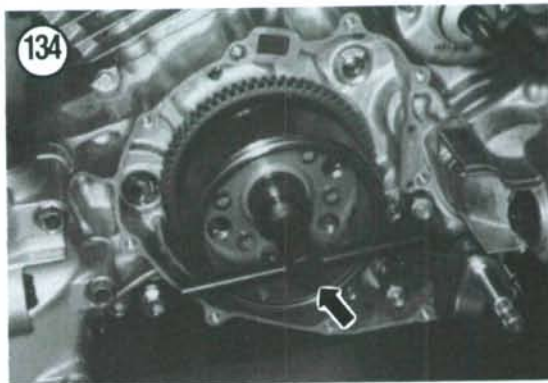
8. The needle bearing will usually come off with the rotor, if it's still in place, slide off the needle bearing and remove the washer (A, **Figure 136**) from the crankshaft.

9. If the needle bearing is still within the rotor, remove it (**Figure 137**).

10. Don't lose the Woodruff key (B, **Figure 136**) in the crankshaft.

CAUTION

Carefully inspect the inside of the rotor (**Figure 138**) for small bolts, washers or other metal "trash" that may have been picked up by the magnets. These small



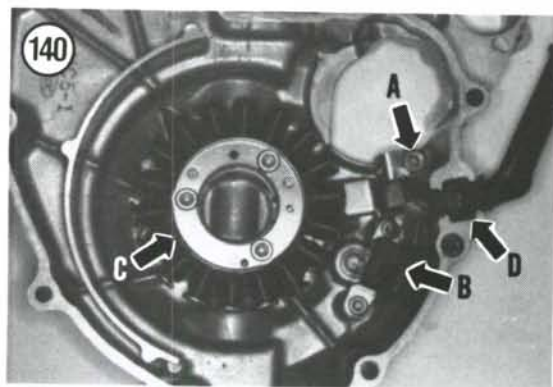
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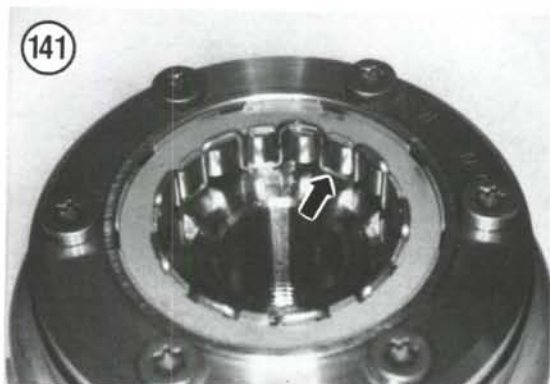
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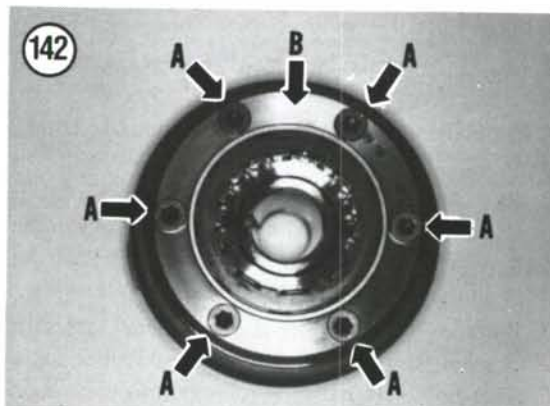
metal bits can cause severe damage to the alternator stator plate components.

11. Remove the starter driven gear (**Figure 139**) from the backside of the rotor assembly.
12. To remove the stator assembly, perform the following:
 - a. Remove the bolt (A, **Figure 140**) securing the electrical harness clamp and remove the clamp.
 - b. Remove the bolts securing the pulse generator assembly (B, **Figure 140**) to the left-hand crankcase cover.
 - c. Remove the bolts securing the stator assembly (C, **Figure 140**) to the left-hand crankcase cover.
 - d. Pull the rubber grommet (D, **Figure 140**) free from the cover. Remove the stator/pulse generator assembly.

Inspection

1. Inspect the one-way clutch (**Figure 141**) on the backside of the rotor for wear or damage.
2. To replace the one-way clutch, perform the following:
 - a. Use an impact driver and a Torx socket and remove the Torx bolts (A, **Figure 142**) securing the one-way clutch housing to the rotor.
 - b. Note the direction of the sprags in the one-way clutch. It must be installed in the same direction.
 - c. Remove the housing and the one-way clutch.
 - d. Install the one-way clutch and the housing (B, **Figure 142**).
 - e. To make sure the one-way clutch is installed correctly; temporarily install 2 Torx bolts then

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install the starter driven gear. Looking at the starter driven gear, the gear must be able to rotate only *clockwise*. If the starter gear rotates *counterclockwise*, the one-way clutch is installed backwards. Remove the one-way clutch and turn it over. Reinstall the starter driven gear and check for proper rotation. Remove the 2 Torx bolts.

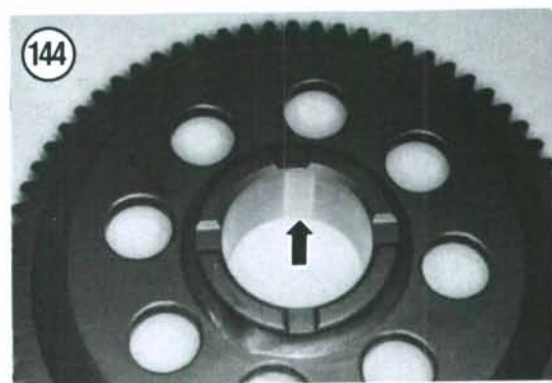
- f. Apply Loctite Threadlocker to the threads of the Torx bolts.
 - g. Install the Torx bolts and tighten to the torque specification listed in **Table 2**.
3. Inspect the gear teeth (**Figure 143**) on the starter driven gear for chipped or missing teeth. Replace the starter driven gear if necessary.
 4. Inspect the needle bearing riding surface (**Figure 144**) of the starter driven gear for wear or damage. Replace the starter driven gear if necessary.
 5. Inspect both rows of needles (**Figure 145**) in the needle bearing. The needles must rotate freely with no binding. Replace the needle bearing if necessary.
 6. For electrical inspection of the alternator rotor and stator and the pulse generator; refer to Chapter Eight.

Installation

1. If removed, install the stator/pulse generator assembly in the left-hand crankcase cover. Make sure the rubber grommet is positioned correctly in the cover and tighten the bolts securely.
2. Make sure the electrical wire harness clamp and bolts are installed. If left off the electrical wires will come in contact with the rotor and be damaged—instant short circuit.
3. If removed, rotate the starter drive gear *clockwise* as looking at the back of the rotor and install the starter drive gear onto the backside of the rotor (**Figure 139**).
4. Install the needle bearing (**Figure 137**) into the rotor assembly.
5. Install the washer (A, **Figure 136**) onto the crankshaft.
6. Make sure the Woodruff key (B, **Figure 136**) is in place on the crankshaft and align the keyway in the rotor with the key when installing the rotor. Push the rotor all the way on until it stops.
7. Temporarily install the gearshift pedal and shift the transmission into 4th gear. Have a helper apply the rear brake. Tighten the rotor bolt to the torque

specification listed in **Table 2**. Remove the gearshift pedal.

8. Install the left-hand crankcase cover as described in this chapter.
9. Connect the alternator/pulse generator electrical connectors.
10. Fill the engine with the recommended type and quantity of engine oil as described in Chapter Three.



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